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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/537,614	02/06/2006	Stefan Golz	Le A 36 493	6701

35969 7590 03/06/2007

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EXAMINER	
LONG, SCOTT	
ART UNIT	**PAPER NUMBER**
1633	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/06/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/537,614	GOLZ ET AL.	
	Examiner	Art Unit	
	Scott D. Long	1633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *6/3/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Status

Claims 1-10 are pending. Claims 1-10 are under current examination.

Sequence Compliance

Sequence Listing and CRF have been received and are acknowledged by examiner. A statement that the Computer Readable Form (CRF) and the Sequence Listing are identical has been submitted and is acknowledged by examiner.

Oath/Declaration

The oath or declaration, having the signatures of all inventors, received on 3 June 2005 is in compliance with 37 CFR 1.63.

Information Disclosure Statement

The Information Disclosure Statements (IDS) filed on 3 June 2005 consisting of 1 sheet(s) are in compliance with 37 CFR 1.97. Accordingly, examiner has considered the Information Disclosure Statements.

Priority

This application claims benefit as a 371 of PCT/EP03/13281 (filed 11/26/2003). The application also claims benefit from the foreign (German) patent applications

10257354.9 (filed 12/9/2002). The instant application has been granted the benefit date, 9 December 2002, from the German application 10257354.9.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is directed to a "nucleic acid molecule", but each of the steps a-f are directed to "nucleic acid molecules." A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd.

App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1a-f recites the broad recitation "molecules", and the preamble of claim 1 also recites "molecule" which is the narrower statement of the range/limitation.

Likewise, claims 2-3 are directed to the "molecules" of claim 1, whereas claim 1 is directed to "nucleic acid molecule". Clearly, "nucleic acid molecule" is a narrower range than "molecules"; therefore claims 2-3 also contain indefinite language.

Claim 7 recites the limitation "the CGFP" in line 1 of the instant claim. There is insufficient antecedent basis for this limitation in the claim.

Claim 10 provides for the "use of the fluorescent CGFP", but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claim 10 also recites the limitation, "the fluorescent protein CGFP." There is insufficient antecedent basis for this limitation in the claim.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-3 and 6-9 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter

which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The methodology for determining adequacy of Written Description to convey that applicant was in possession of the claimed invention includes determining whether the application describes an actual reduction to practice, determining whether the invention is complete as evidenced by drawings or determining whether the invention has been set forth in terms of distinguishing identifying characteristics as evidenced by other descriptions of the invention that are sufficiently detailed to show that applicant was in possession of the claimed invention (*Guidelines for Examination of Patent Applications under 35 USC § 112, p 1 "Written Description" Requirement;* (Federal Register/Vol 66. No. 4, Friday, January 5, 2001; II Methodology for Determining Adequacy of Written Description (3.)).

Claim 1 is broadly drawn, such that it applies to a genus of nucleic acid molecules encoding fluorescent molecules having 95% (1-e) and 65% (1-f) homology with SEQ ID NO:1. Likewise, claim 1 is also drawn to a genus of nucleic acid molecules which hybridize with SEQ ID NO:1 or differ from SEQ ID NO:1 because of degeneracy of the genetic code. However, there are no examples of sequences that meet the criteria of claim 1c-f provided in the instant application.

Claim 1d-f encompass an enormous number of nucleic acids. Some of these nucleic acid sequences encode different proteins. The nucleic acids and the amino acid sequences they encode, are structurally distinct chemical compounds and are unrelated

to one another. Consequently, they would be different inventions from that of claim 1a-b. Even nucleic acid differences due to degeneracy, which might be allelic variants have alternate uses, such as in diagnostics and would be considered different inventions. Despite these facts, there are no details provided which describe the structure of the nucleic acid variants. In addition, there are a potentially huge number of nucleic acid variants which could be made to SEQ ID NO:1 that might affect its activity. No description has been made as to which portions of the SEQ ID NO:1 gene are vital or important to the corresponding protein activity.

With respect to claim 1-c limiting a polynucleotide by hybridization conditions, even under relatively high stringent conditions, the claimed nucleotide sequence could hybridize to a genus of polynucleotides that are similar, but not identical to the recited polynucleotides. The limitation by hybridization is obviously generic to a considerable number of nucleotides varying in the length of the nucleic acids, the degree of homologies among the sequences, and the biological activities of the encoded polypeptides, which may or may not have identical fluorescence characteristics. This genus also embraces sub-sequences that are unknown and include unsequenced polynucleotides, whose function is yet to be determined. The nucleic acids might also encompass very large nucleic acids that hybridize under highly stringent conditions only over a short range near one end of both sequences. In this case, there would be a very low level of homology between the two sequences, despite high stringency hybridization. Furthermore, there are no working examples of nucleic acids that have been isolated through the stringent hybridization method.

Claims 2-3, being dependent from claim 1 contains all of the issues described in the rejection of claim 1, above.

Claims 6-9 are broadly drawn such that they refer a large genus of peptides of variable length, having distinct structures, but without a clearly defined structure. The specification does not provide particular examples to describe the scope of this genus. Claim 9, in particular is broadly drawn to any peptide having more than 5 contiguous amino acids which are recognized immunologically by antibodies to the fluorescent protein CGFP; the scope of these peptides is definitely not described in the specification, and can only be determined by experimentation.

The Revised Interim Guideline for Examination of Patent Applications under 35 USC § 112, p1 "Written Description" Requirement (Federal Register/ Vol 66. No 4, Friday January 5, 2001) states "THE CLAIMED INVENTION AS A WHOLE MAY NOT BE ADEQUATELY DESCRIBED IF THE CLAIMS REQUIRE AN ESSENTIAL OR CRITICAL ELEMENT WHICH IS NOT ADEQUATELY DESCRIBED IN THE SPECIFICATION AND WHICH IS NOT CONVENTIONAL IN THE ART" (column 3, page 71434), "WHEN THERE IS SUBSTANTIAL VARIATION WITHIN THE GENUS, ONE MUST DESCRIBE A SUFFICIENT VARIETY OF SPECIES TO REFLECT THE VARIATION WITHIN THE GENUS", "IN AN UNPREDICTABLE ART, ADEQUATE WRITTEN DESCRIPTION OF A GENUS WHICH EMBRACES WIDELY VARIANT SPECIES CANNOT BE ACHIEVED BY DISCLOSING ONLY ONE SPECIES WITHIN THE GENUS" (column 2, page 71436, emphasis added).

Vas-Cath Inc. v. Mahurkar, 19USPQ2d 1111, clearly states that "APPLICANT MUST CONVEY WITH REASONABLE CLARITY TO THOSE SKILLED IN THE ART THAT, AS OF THE FILING DATE SOUGHT, HE OR SHE WAS IN POSSESSION OF THE INVENTION. THE INVENTION IS, FOR

PURPOSES OF THE 'WRITTEN DESCRIPTION' INQUIRY, *WHATEVER IS NOW CLAIMED.*" (See page 1117). The specification does not "clearly allow persons of ordinary skill in the art to recognize the [he or she] invented what is claimed." (See *Vas-Cath* at page 1116).

One cannot describe what one has not conceived. See *Fiddes v. Baird*, 30 USPQ2d 1481, 1483. In *Fiddes*, claims directed to mammalian FGF's were found to be unpatentable due to lack of written description for that broad class. The specification provided only the bovine sequence.

Considering the potentially large numbers of polynucleotides and polypeptides encompassed by these claims, the disclosure is not sufficient to show that a skilled artisan would recognize that the applicant was in possession of the claimed invention (genus) commensurate to its scope at the time the application was filed.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-6 and 9-10 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 1-3 are rejected under 35 U.S.C. 101 because the nucleic acids molecules are not "isolated" and therefore show no "hand of man".

Claim 4 is rejected under 35 U.S.C. 101 because the "organism" is directed to non-statutory subject matter. If the organism is transgenic, then it reads on "transgenic

humans" If the organism is one treated by a gene therapy vector, then claiming the organism is not statutory.

Claim 5 is rejected under 35 U.S.C. 101 because the oligonucleotides are not "isolated" and therefore show no "hand of man".

Claims 6 and 9 rejected under 35 U.S.C. 101 because the peptides are not "isolated" and therefore show no "hand of man".

Claim 10 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd.* v. *Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 5 is rejected under 35 U.S.C. 102(b) as being anticipated by Michaels (US-6,096,865, issued 1 August 2000).

Claim 5 is directed to oligonucleotides, having more than 10 contiguous nucleotides which are identical or complementary to DNA sequences of claim 1. Michaels teaches a DNA sequence of green fluorescent protein, which has more than 10 contiguous nucleotides identical to the instantly claimed sequence SEQ ID NO:1. In particular, SEQ ID NO:46, nucleotides 356-369 (col.31-32), meet the limitations of claim 5.

Accordingly, Michaels. anticipated the instant claim.

Claim 6-9 is rejected under 35 U.S.C. 102(b) as being anticipated by Levine et al (Compar. Biochem. Physiol. B, 1982. 72;1:77-86).

Claim 6 is directed to peptides which are encoded by the nucleotide sequence of claim 1. Levine et al. teach a green fluorescent protein (phialidin, also known as clytin) isolated from *Phialidium gregarium*. This is the same protein taught by the instant specification as coming from the same organism with the alternate name, *Clytia gregaria*.

Claim 7 is directed to a method of expressing the CGFP polypeptide in eukaryotic cells. Levine et al. teach that the eukaryotic organism, *Phialidium gregarium*, expresses the green fluorescent protein (phialidin).

Claim 8 is directed to a method of purifying/isolating a CGFP polypeptide. Levine et al teach isolation of green fluorescent protein (phialidin).

Claim 9 is directed to peptides, having more than 5 contiguous amino acids which are recognized by antibodies to the fluorescent protein CGFP. The protein taught by Levine et al. is more than 5 contiguous amino acids.

Accordingly, Levine et al. anticipated the instant claims.

Conclusion

No claims are allowed.

Examiner Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Scott Long** whose telephone number is **571-272-9048**. The examiner can normally be reached on Monday - Friday, 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Joseph Woitach** can be reached on **571-272-0739**. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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